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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,808	10/01/2003	Koichi Otsuki	Q77778	8787

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EXAMINER	
FIDLER, SHELBY LEE	
ART UNIT	**PAPER NUMBER**
2861	

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,808	OTSUKI, KOICHI	
	Examiner	Art Unit	
	Shelby Fidler	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 June 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claims 2, 8, 9-16, 19, and 25 is withdrawn in view of the newly discovered reference(s) to Takahashi et al. (US 6532026 B2) and Ohtsuka et al. (US 6145950). Rejections based on the newly cited reference(s) follow.

Claim Objections

Claim 1 is objected to as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Line 2 recites "a first ink set or a second ink set." However, line 4 recites "uses inks included in the first ink set" and line 5 recites "uses inks included in the second ink set." This is unclear since both ink sets are being used while only one of the two ink sets are mounted. Correction is required.

Similar objection applies to claim 17.

Claim 12 is objected to because of the following informalities: line 10 recites "suitable for the bi-directional selected via the position adjustment value setter." There appears to be a missing term since "bi-directional" is not modifying anything. For the purpose of this rejection, Examiner assumes that this should read "bi-directional print mode." Appropriate correction is required.

Claim 24 recites the limitation "second adjustment value" in line 5. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-5, 8-13, 16-22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6532026 B2) in view of Ohtsuka et al. (US 6145950).

Takahashi et al. teach the following:

***regarding claims 1, 9, 17, and 18**, a printing apparatus comprising a print head (print head 1, Fig. 6A) that has a plurality of nozzle groups each including a plurality of nozzles for ejecting an identical color (col. 16, lines 31-40), the printing apparatus having a bi-directional printing function of performing main scanning for moving the print head relative to a printing medium (col. 1, lines 13-19) and sub-scanning for moving the print head relative to the printing medium in a direction that transverses a direction of the main scanning (col. 1, lines 49-57), and ejecting ink from nozzles onto the printing medium on each of forward passes and backward passes of the main scanning of bi-directional movement to form dots on the printing medium (col. 1, lines 13-19), the printing apparatus comprising:

a position adjustment value storage (memory 107) that stores a position adjustment value for reducing misalignments of dot forming positions between forward passes and backward passes of the main scanning (col. 17, lines 32-36);

a position adjuster (controller 100) that adjusts dot forming positions along the main scanning direction during the bi-directional printing based on the position adjustment value stored in the position adjustment storage (e.g. flowchart of Fig. 16); and

an ink cartridge mount (e.g. carriage unit 2, Fig. 5) that can mount one or more ink cartridges thereon (col. 15, lines 8-11), the one or more ink cartridges having ink tanks each containing ink to be supplied to each of the nozzle groups (col. 15, lines 50-55);

the printing apparatus can use a first ink set (head1 from col. 42, lines 52-56 uses black, cyan, magenta, and yellow inks, col. 15, lines 50-55) and a second ink set (head2 uses black, light cyan, and light magenta, col. 42, lines 61-63) that have mutually different combinations of available inks (the set of combinations in the first ink set is different from the set of combinations in the second ink set);

the printing apparatus can use a first bi-directional print mode (print mode with the head configuration of only head1, col. 42, lines 52-54) that selectively uses inks included in the first ink set (col. 16, lines 1-7) and a second bi-directional print mode (print mode with the head configuration of only head2, col. 16, lines 1-7) that selectively uses inks included in the second ink set (col. 42, lines 61-63) so that a combination of inks used in the first bi-directional print mode is different from a combination of inks used in the second bi-directional print mode (the combinations of inks differ between print modes);

the position adjustment value storage can store a plurality of position adjustment values (col. 17, lines 32-36) including a first position adjustment value for the first bi-directional print mode (col. 42, lines 55-61) and a second position adjustment value for the second bi-directional print mode (col. 42, line 61 - col. 43, line 5); and

the position adjustment unit selects a position adjustment value for a bi-directional print mode used by the printing apparatus out of the plurality of position adjustment values to adjust dot forming positions (col. 43, lines 33-41)

*the cartridge is exchangeable (col. 15, lines 7-10), and the ink tanks are attachable and detachable to the cartridges (col. 15, lines 54-55)

***further regarding claim 18**, storing a plurality of position adjustment values associated with the first bi-directional print mode and a second plurality of position adjustment values associated with the second bi-directional print mode (coarse and fine adjustment values, col. 12, lines 42-45)

***regarding claims 2, 10, and 19**, the first bi-directional print mode and the second bi-directional print mode are bi-directional color printing modes (col. 16, lines 4-7 shows that the mode using head1 is color; col. 42, lines 61-63 shows that the mode using head2 is color)

***regarding claims 3, 11**, a test pattern generator (printer driver, col. 49, lines 41-49) that generates a test pattern to be printed (col. 45, lines 26-31),

wherein the test pattern can be used to test misalignments of the dot forming positions (col. 45, lines 32-35); and

a position adjustment value setter that allows a user to set the position adjustment value to be stored in the position adjustment value storage (col. 45, lines 48-52);

wherein the test pattern generation unit can generate a test pattern suitable for the first bi-directional print mode and a test pattern suitable for the second bi-directional print mode (col. 43, lines 23-28)

***regarding claims 4, 12, and 21**, the test pattern generator generates the test pattern suitable for the bi-directional selected via the position adjustment value setter (col. 43, lines 23-28); and

the selected bi-directional print mode is subject to setting of the position adjustment value out of the plurality of available bi-directional print modes (col. 43, lines 33-41)

***further regarding claim 21**, selecting a position adjustment value according to the printed test pattern (col. 45, lines 48-52)

***regarding claims 5, 13, and 22**, a position adjustment value setter that sets the position based on the print mode (col. 43, lines 33-41)

***regarding claims 8, 16, and 25**, the position adjuster outputs a warning when the position adjustment value storage does not store the position adjustment value for the bi-directional print mode used by the printing apparatus (col. 45, lines 6-20 shows that, in the event the optical sensor will not operate normally, an error message is displayed; when the optical sensor does not operate, no adjustment value can be stored)

***regarding claim 20**, selecting a first position adjustment value or a second position adjustment value comprises:

printing a test pattern using the first plurality of position adjustment values or the second position adjustment values (e.g. the test pattern in Fig. 50A); and

selecting a first position adjustment value or a second position adjustment value according to the printed test pattern (col. 45, lines 48-52)

Takahashi et al. do not expressly teach the following:

***regarding claims 1, 9, and 17**, replacement of at least one of the ink tanks with another ink tank containing different type of ink

***regarding claims 4, 12, and 21**, the ink cartridge comprises a memory that stores information including types of contained inks;

the printing apparatus comprises a reader for reading out information stored in the memory;

the position adjustment setter displays a plurality of bi-directional print modes available to the printing apparatus based on information read out by the reader and allows a user to select a bi-directional print mode

***further regarding claim 21**, the first ink set is contained in a first ink cartridge and the second ink set is contained in a second ink cartridge

***regarding claims 5, 13, and 22**, the ink cartridge comprises a memory that stores information used to set the position adjustment value, and

the printing apparatus further comprising:

a reader that reads out the information from the memory; and

the print mode is set based on the information read out from the memory

***regarding claim 24**, selecting a second position adjustment value (fine adjustment value) when no first position adjustment value (coarse adjustment value) is stored (col. 46, lines 5-10); and

selecting a first position adjustment value when no second adjustment value is stored (col. 45, lines 62-65 show that the coarse adjustment value is used to print a pattern for the fine adjustment value, which as col. 45, lines 36-37 show, has not been stored)

Ohtsuka et al. teach the following:

***regarding claims 1, 9, and 17**, replacement of at least one of the ink tanks with another ink tank containing different type of ink (col. 4, lines 39-43)

***regarding claims 4, 12, and 21**, the ink cartridge comprises a memory (ID information, col. 7, lines 62-64) that stores information including types of contained inks (col. 10, lines 17-23);

the printing apparatus comprises a reader (contact 71) for reading out information stored in the memory (col. 9, lines 1-6);

the position adjustment setter displays a plurality of bi-directional print modes available to the printing apparatus (col. 21, lines 44-45) based on information read out by the reader (col. 21, lines 22-26) and allows a user to select a bi-directional print mode (col. 21, lines 45-48)

***further regarding claim 21**, the first ink set is contained in a first ink cartridge and the second ink set is contained in a second ink cartridge (col. 19, lines 51-55 read on Fig. 22)

***regarding claims 5, 13, and 22**, the ink cartridge comprises a memory (ID information, col. 7, lines 62-64) that stores information used to set the print mode (col. 10, lines 17-23), and

the printing apparatus further comprising:

a reader (contact 71) that reads out the information from the memory (col. 9, lines 1-6); and

the print mode is set based on the information read out from the memory (col. 21, lines 22-26)

***further regarding claim 22**, the first ink set is contained in a first ink cartridge and the second ink set is contained in a second ink cartridge (col. 19, lines 51-55 read on Fig. 22)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize a second ink set that has mutually different combinations of inks, from the first ink set, through replacement of at least one of the ink tanks with another ink tank containing a different type of ink in Takahashi et al.'s invention. The motivation for doing so, as taught by

Ohtsuka et al., is to allow the user to easily select an appropriate combination of a type of ink to obtain high-quality images (col. 5, lines 5-11).

Claims 6, 7, 14, 15, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. (US 6532026 B2) in view of Ohtsuka et al. (US 6145950), as applied to claim 9 above, and further in view of Fuse (US 5539434).

Takahashi et al. modified by Ohtsuka et al. teach all claimed limitations except for the following:

***regarding claims 6, 14, and 23**, the position adjuster uses a preset standard value when the position adjustment value storage does not store the position adjustment value for the bi-directional print mode used by the printing apparatus

***regarding claims 7, 15**, the position adjuster uses the position adjustment value for another bi-directional print mode when the position adjustment value storage does not store the position adjustment value for the bi-directional print mode used by the printing apparatus

Fuse teaches the following:

***regarding claims 6, 14, and 23**, the position adjuster uses a preset standard value when the position adjustment value storage does not store the position adjustment value for the bi-directional print mode used by the printing apparatus (col. 10, line 66 - col. 11, line 4)

***regarding claims 7, 15**, the position adjuster uses the position adjustment value for another bi-directional print mode when the position adjustment value storage does not store the position adjustment value for the bi-directional print mode used by the printing apparatus (col. 10, line 66 - col. 11, line 4; the default value is used for any print mode in which a predetermined period of time had passed)

At the time of invention, it would have been obvious to a person of ordinary skill in the art to utilize a preset standard value when the position adjustment value storage does not store the position adjustment value in Takahashi et al.'s invention modified by Ohtsuka et al. The motivation for doing so, as taught by Fuse, is so that the printing operation can be performed with high efficiency (col. 11, lines 20-22).

Response to Arguments

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "the printing apparatus being capable of selectably mounting thereon a first ink set or a second ink set that have mutually different combinations of inks") are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

In response to applicant's arguments that none of the cited references teaches or suggest the limitation "wherein the first ink set is contained in a first ink cartridge and the second ink set is contained in a second ink cartridge," Olsen (US 6454381) teaches this limitation in col. 4, lines 63-65.

Communication with the USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shelby Fidler whose telephone number is (571) 272-8455. The examiner can normally be reached on MWF 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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SLF

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K. FEGGINS
PRIMARY EXAMINER